

NAVAL HEALTH RESEARCH CENTER

REPORT OF CASE FINDING FOR LYMPHOID AND MYELOID LEUKEMIA AMONG NAVY AND MARINE CORPS MEMBERS ASSIGNED TO NSAWC/ NAS FALLON OR THEIR DEPENDENTS

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TECHNICAL DOCUMENT

Report of Case Finding for Lymphoid and Myeloid Leukemia Among Navy and Marine Corps Members Assigned to NSAWC/ NAS Fallon or their Dependents

by

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Introduction

The Nevada State Health Department identified a cluster of 12 cases of acute lymphocytic leukemia (ALL) that were diagnosed in children and teenagers in Churchill County, Nevada, a rural county approximately 50 miles east of Reno, Nevada, during 1999-2000. Churchill County has a resident population of about 26,000 persons. It is the home of the Naval Strike and Air Warfare Center and the Naval Air Station Fallon, where extensive TOPGUN training and other graduate Naval aviation training is performed. There is a permanent complement at NSAWC/NAS Fallon of approximately 1,038 Naval officers and enlisted personnel, and fewer than 10 Marine Corps personnel. One of the 12 Churchill County cases was diagnosed in a child of an active-duty Navy enlisted person. For this reason, the Nevada State Epidemiologist asked the Navy for help in locating other possible leukemia cases in children of Naval personnel who may have left Churchill County and would be unknown to the Nevada State Health Department. At the request of BUMED and the Commanding Officer, NAS/NSAWC Fallon, the Naval Health Research Center (NHRC) joined the effort to assist the Nevada State Health Department on 16 March 2001 in case finding.

Objective

The objective of this effort was to assist the Nevada State Health Department in identifying cases of lymphoid or myeloid leukemia during the cluster period, from 1 January 1997 to the present, in Navy and Marine Corps personnel or their dependents under age 25, using existing electronic data resources.

Methods

The case definition used in this search was developed in collaboration with the Nevada State Health Department State Epidemiologist, Dr. Randall Todd and CAPT Jeff Yund, MC, USN, of the Navy Bureau of Medicine and Surgery (MED-24). The definition included any individual aged 0-25 years, first hospitalized for lymphoid leukemia (ICD9 Code 204.xx) or myeloid leukemia (ICD9 Code 205.xx) during the period from 1 January 1997 to 15 March 2001. The individual could be a member of the Navy or Marine Corps assigned to an NSAWC/NAS Fallon unit or the dependent of a Navy or Marine Corps member ever assigned to an NSAWC/NAS Fallon unit. If the potential case was a service member, then assignment to a Fallon unit for six or more months at any time during the military career was the criterion for inclusion. If the potential case was a dependent, then assignment of the sponsor to a Fallon unit for any length of time during a period from two years preceding the dependent's birth or any time between birth and diagnosis was the

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criterion for inclusion. These criteria are depicted in the figure.

Data Sources Used for Case Identification. Two large hospitalization data bases were searched for potential cases. The first of these was the Standard Inpatient Data Record (SIDR) inpatient database of admissions to DoD medical treatment facilities. This database, which is maintained by the Corporate Executive Information Service (CEIS) at Fort Detrick, Maryland, was used to ascertain hospitalizations within DoD medical treatment facilities. The second was the Health Care Service Record (HCSR), available from the TriCare Management Authority (TMA), which was used to ascertain DoD-reimbursed hospitalizations of beneficiaries outside military medical treatment facilities. The search procedure that was used was extensive, but was limited to hospitalizations in military or civilian hospitals with links to DoD. It did not include any hospitalizations not reimbursed by DoD, or any not yet reported in the SIDR and HCSR databases. Reporting of hospitalizations may sometimes require several months before the case appears in centralized databases. Therefore, data for cases that occurred during the last half of 2000 and during 2001 should be considered incomplete.

Data Sources Used to Identify Fallon Assignment. A search of military career histories was performed for all sponsors and service members identified as potential cases. This was performed using the Career History Archival Medical and Personnel System (CHAMPS), which contains personnel and medical information on Navy enlisted members who have served on active duty from 1 January 1965 to the present. CHAMPS provided an individualized listing of career duty station assignments. CHAMPS was supplemented with official personnel data files from the Navy Bureau of Personnel (BUPERS) for Navy officers and from Headquarters Marine Corps (HQMC) for Marine Corps members for the period from 1 January 1989 to 31 December 2001. A parallel search was performed at the request of NHRC by the Defense Manpower Data Center (DMDC) in Monterey CA, using the DMDC Unit Identification Code (UIC) History File, which has been maintained by DMDC since 1 January 1990.

Results

Approximately 2 million hospitalization records were searched for the period 1 January 1997 to 15 March 2001; an additional 10 million prior hospitalization records were searched to confirm that the cases hospitalized on or after 1 January 1997 were new incident cases. The search revealed 128 records of first hospitalization for leukemia in Navy or Marine Corps beneficiaries under age 25.. Ninety cases were lymphoid leukemia (ICD9 code 204.xx) and 38 cases were myeloid leukemia (ICD9 code 205.xx) These included 56 cases identified throughout the world from the SIDR files and 72 from the HCSR files.

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There was one case who had an association with Fallon and met the case definition. This case was a girl aged 3 years 6 months at the time she was first hospitalized on 17 June 2000 with a diagnosis of acute lymphocytic leukemia (ICD9 Code 204.00). She was born 31 December 1996, while her father was assigned to a Fallon Construction Battalion. The child's father was assigned to Fallon Construction Battalion 416 on 11 October 1996, according to official personnel records. This case was previously known to the Nevada State Health Department and the Branch Medical Clinic, NAS Fallon. There were no other cases that met the case definition in members of the Navy or Marine Corps or their dependents.

Conclusions

After searching all DoD-sponsored hospitalization records of Navy and Marine Corps personnel and their dependents from 1 January 1997 through 15 March 2001, only one case of lymphoid or myeloid leukemia was found in a child of a sponsor associated with NSAWC/NAS Fallon. This case of acute lymphocytic leukemia was previously known to NAS Fallon medical personnel and the Nevada State Health Department as part of the original cluster investigation.

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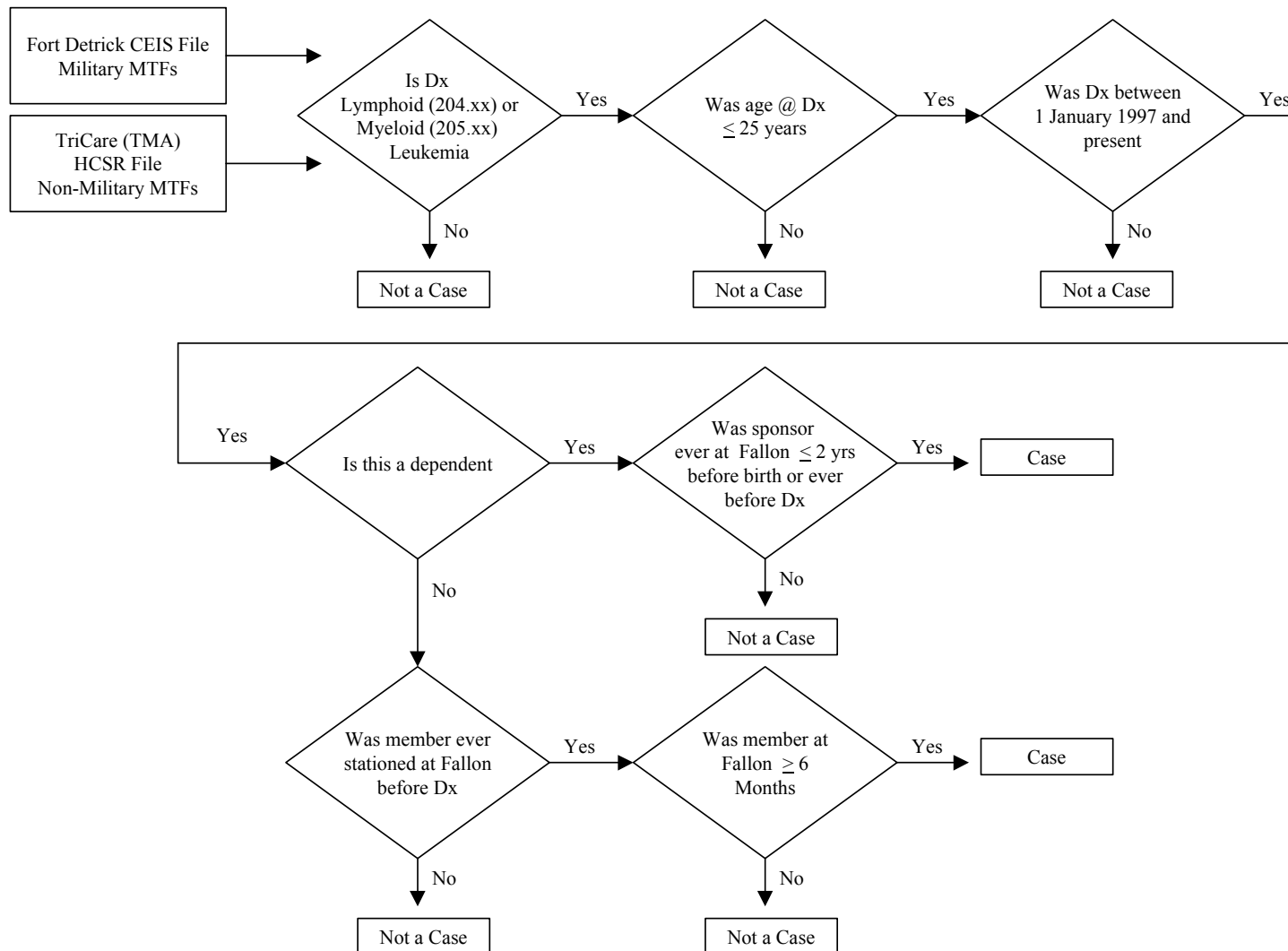


Figure. Case Criteria and procedures used for ascertainment of lymphoid or myeloid leukemia during 1 JAN 1997 – 15 MAR 2001 among Navy and Marine Corps Members Assigned to NSAWC/ NAS Fallon or their Dependents

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